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ABSTRACT

This annual journal contains articles about pedagogy written by faculty members of New Hampshire's Community Technical Colleges. Included in this volume are: (1) "Preface" by Paul Marashio; (2) "Distance Education: An Educator's Experience as an On-Line Student" by John Marclay; (3) "Emergence" by L. Sue Webb; (4) "Art and Nursing" by Karen A. Noonan and Wendy A. Labelle; (5) "I Did" by Tammy Ashley; (6) "Portrait of a Teacher as an Artist" by Paul Marashio; (7) "Teaching Developmental Writing: Sentence Diagrams and the Writing Process" by Marion B. Schafer; (8) "Don't Fill a Vessel. Spark a Flame" by Larry Carle; (9) "The Changing Classroom--Not Blackboard--in Physics" by Janice G. Kaliski; (10) "To Cheat or Not To Cheat: The Inhibitory Factor of an Honor Code" by Sandra Cole; and (11) "An Account and an Analysis of the Impact of Web Technology on Distance Education: What Remains Unchanged, What Is Changing" by Wendy Smith. A bibliography and author contact list are included at the end of the volume. (GC)

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PEDAGOGY JOURNAL

Volume 8, 2001

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P. Marashio

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"Education is the kindling of a flame, not the filling of a vessel."

Socrates

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PEDAGOGY JOURNAL

New Hampshire Community
Technical Colleges

PREFACE

Paul Marashio
Pedagogy Committee Chair

My job as editor of the Pedagogy Journal comes from the wide-ranging variety with which we come to see and define pedagogy. The definition itself – the art of teaching – affords us this wonderful opportunity to take full advantage of this expansive definition. Through the years the New Hampshire Community Technical College faculty has done just that. In return many articles published over the years have pushed us to the forefront of cutting edge pedagogy. Whether we are writing about hi-tech, low tech, or no tech often the authors take us in to a new way of seeing. Since their pedagogy practices are validated through practice or research, the journal readers are given a glimpse into what they can bring into their classrooms, knowing the pedagogy works. Every article in the journals offers a thoughtful, practical pedagogy blue print. This year's journal is no exception. Articles as diverse as Teacher as Artist, Creativity, honor system to discourage cheating, assessment of clinicals, classroom assessment, the writing process with a different approach, and two different looks at Distance Learning are included in this volume of the Pedagogy Journal. Once again, as these articles testify, our system faculty are committed to find ways to help students learn and in doing so work on innovative pedagogy.

Evident in this Pedagogy Journal as in previous volumes is the enthusiasm, commitment, and dedication of the authors to improve the way of teaching and the way learning.

The journal editors hope you enjoy this volume of pedagogy articles that continue on with our expansive view of pedagogy.

CONTENTS

Pages

PREFACE ....
Paul Marashio

DISTANCE EDUCATION: AN EDUCATOR'S EXPERIENCE AS AN ON-LINE STUDENT 1
John Marclay

EMERGENCE 5
L. Sue Webb

ART AND NURSING 13
Karen A. Noonan and Wendy A. LaBelle

I DID 15
Tammy Ashley

PORTRAIT OF A TEACHER AS AN ARTIST 17
Paul Marashio

TEACHING DEVELOPMENTAL WRITING: SENTENCE DIAGRAMS AND THE WRITING PROCESS 21
Marion B. Schafer

DON'T FILL A VESSEL. SPARK A FLAME 25
Larry Carle

THE CHANGING CLASSROOM – NOT BLACKBOARD – IN PHYSICS 31
Janice G. Kaliski

TO CHEAT OR NOT TO CHEAT: THE INHIBITORY FACTOR OF AN HONOR CODE 47
Sandra Cole

AN ACCOUNT AND AN ANALYSIS OF THE IMPACT OF WEB TECHNOLOGY ON DISTANCE EDUCATION: WHAT REMAINS UNCHANGED, WHAT IS CHANGING 53
Wendy Smith

AUTHORS 61

DISTANCE EDUCATION: AN EDUCATOR'S EXPERIENCE AS AN ON-LINE STUDENT

John Marclay

INTRODUCTION

The New Hampshire Community Technical College System introduced Blackboard - a web-based platform for delivering courses over the internet - a few years ago and almost immediately I saw it as a way to overcome some of the obstacles of low enrollment in my one-of-a-kind program in New Hampshire. After an introduction and some dabbling in putting course work into Blackboard, I enrolled in a distance course through Penn State.

I thought, what better way to understand what a student goes through when taking a distance course than taking one myself. So, I began my course with a dual objective, acquire some graduate credits and critically observe the distance education process at the same time. The name of the course; "Introduction to Distance Education"

There are some things that I noticed immediately in the distance course: I was alone, I never learned this way before, I didn't have anyone telling me what to do, and it was up to me to stay on track, and keep up with the course timetable.

As a new distance education (DE) learner, I spent the first week learning the workings of the web-based technology and learning my way through the site resources. I am fairly technologically savvy, but I was still intimidated by format and the apprehension of wondering if I could really learn this way. As well as the format being different, I was also worried about my computer working properly and my internet connection reliability. A web-based course in very technology dependent, and it can be very stressful if the technology isn't cooperative.

DE DESIGN

> Lesson 1: When designing a distance course, include a simple introductory lesson or task to get the student accustomed to the technology and medium. Give detailed instructions and have technological support available. If the student can't learn the technology, he/she is going to fail or drop out.

The first assignment was to formulate a definition of DE, and post it on an electronic bulletin board for others to read and reply to. Suddenly, I was no longer alone! Ten or fifteen students responded to my definition, I responded to theirs and before long there were one hundred messages to read. The interaction was much greater than in a classroom. I discovered that the format is great for shy or pensive people, it gives them time to formulate their responses which is an added benefit if English is not their native language. I was genuinely anxious to return to the course to read the responses to my postings.

INTERACTION

> Lesson 2: Provide a way for interaction. This is typically what people are afraid will be lacking in a distance course. Usually, the interaction is facilitated with thought questions or by soliciting opinions on a topic. The web overcomes the lack of timely interaction in older style correspondence courses, since feedback is much quicker electronically, than it is via mail.

Along the lines of providing interaction is the idea of humanization of the student. When taking courses on-line I sometimes forgot that I was conversing with a person and not a computer. The student needs to sense that they are unique and important. Early encouragement from the instructor goes a long way toward this end in a distance course.

When conversing in text, we can't pick up on the body language, smiles, winks, or voice inflection that we are so accustomed to in face-to-face classrooms. There were a few times when the class had difficulty telling when someone was joking, and we had to ask for clarification.

STUDENT CONTACT

> Lesson 3: Contact the student in the beginning of the course and provide frequent feedback/encouragement. That early contact was important to me, and really did lower my anxiety level. It let me know that I was not just an anonymous seat in a classroom. It also gave me assurance that I could talk with someone if I had any problems. The instructor personally commented on each assignment and took part in the discussion on the bulletin board. He regularly stimulated my thinking and prompted me to investigate an area more thoroughly if I hit upon a complex or controversial topic.

Keeping on track was a challenge. The courses that I have taken through Penn State have all been paced. They begin and end on pre-established dates. There are usually weekly assignments, and the courses can be very time consuming. I guess that is the price one pays for the convenience of not needing to travel. In addition to being time consuming, the course can be confusing if the instructions are not clearly written. It is simpler to get clarification on instructions in a face-to-face course than it is via distance.

ORGANIZATION

> Lesson 4: Since instructions are given through print, be careful to write the instructions in simple terms and in an organized fashion. The student should be able to go to a single page for the instructions for a particular assignment. Also, make a calendar with due dates that the students can visualize to help keep them on track.

DRAWBACKS OF DE

So far, the distance courses that I have taken have been interesting and mostly pleasant experiences, but there are a few things that I didn't like about DE.

The most troublesome aspect was reading text on a computer screen. If your monitor has a lot of flicker, your eyes can become seriously fatigued. Because of the high use of electronic bulletin boards the fatigue becomes a real issue since there are numerous messages to read. As a result, some students printed out their messages and read them on paper. This worked well for those that were traveling during their course. Printing the messages allowed them to read at their leisure and write their responses on the back of the printout.

Enormous numbers of messages or postings have the potential of becoming overwhelming if there are no limits built into the course. Some courses require a response to only two people, or a sub-group of the total class. The advantage is that there is less to read and respond to, but the disadvantage is that there is limited exposure to a greater number of opinions. Since there is so much student-student interaction and learning happening, I would be hesitant to do anything that would limit that exposure. Probably the best mix is to require students to respond to a

limited number of peer responses, but allow the class to respond to more if they wish. Alternatively, if the class is divided into groups, then let them also be able to post their projects in a place where everyone has access.

Often the people that take distance courses don't have the educational facilities nearby to allow them to attend conventional classroom courses. This usually means that they have limited media resources available as well, and they must rely on the Internet for access to resources. Although there are more full text on-line resources available, it is sometimes difficult to find exactly what you need by searching the web. I found that the ability to do refined web searches was almost a prerequisite to taking web-based courses because I wasted so much time looking for relevant resources. If you design a course that requires web searching, do your students a favor and provide links and URL's that will send them in the right direction to at least get them started, if nothing else.

Finally, distance courses still lack the normal socialization that we are all accustomed to. Let's face it, meeting someone and forming a friendship or falling in love on-line is a little difficult.

Overall, Distance Education provides an opportunity for people to take a course, or a program that might not otherwise be available to them. I think it is worthwhile and effective if designed well, but DE courses take a lot of planning and time. While I would encourage you to consider designing a distance course, come to the drawing board with perseverance and openness to new ideas.

This fall, our program will be offering our first semester core courses 80% on-line. There will be a residency requirement for lab work and testing. I will try to report back on the experience.

EMERGENCE

L. Sue Webb

Upon the conclusion of my speech at the May 2001 graduation at NHCTC-Claremont, I received rounds of applause, smiles of congratulations, heartfelt touches and hugs, and most powerful, tears of promise and release. With their tears still flowing freely as they came up to me, I listened and heard their grateful words, and I understood that my lessons, my story, and my willingness to speak it, had deeply touched them and bestowed illumination in a previously painful and dark place. I graduated that night, earning my Associates in Arts degree, but also I graduated from being an ardent student into a woman who accepts my ability, but more importantly, my *responsibility* to teach from the lessons I continue to learn.

Frank Smith, educational writer and researcher, reaffirms my discovery with his own:

> "Thought flows in terms of stories—stories about events, stories about people, and stories about intentions and achievements. We learn in the form of stories. The best teachers are the best storytellers."

Our lives are composed of moments. Too often they are brief and fleeting, a mere blink in our consciousness.

Most of my life's moments are concerned with the daily plate-spinning management of being a full-time forty-eight year old woman, wife, mother and first-time college student. Rarely, is a moment so powerful, so rich and vivid that it imprints my soul forever. Today, standing here on this stage, speaking to you at our graduation is one of those moments. I am deeply grateful for it, and I thank you.

I welcome these rare and powerful moments. They are the moments of choice, the moments of opportunity. They are the instances in time when my life transforms, and willingly I can lead myself, albeit with quaking apprehension, in a new direction or I can succumb to self-doubt and fear and follow a habitual, well-worn path.

Every one of us here today has experienced such moments of choice, and hopefully, we will continue to, for they are why we were created; they are the essence of living. In my journey so far in this magical mystery tour of life, I have come to understand that the importance of these moments is not in the having of them but in the recognition of what they truly represent. Once understood, the challenge then lies in calling up the courage and fortitude necessary to make a conscious ***choice*** in our response to these moments, regardless of our fears, doubts, and trepidations.

This is not a new concept; I am giving you no revolutionary, radical or cutting edge information. Each of us practices choice every day, to greater or lesser degrees. We are the sum total of our choices, but certainly some choices are incidental while others are monumental; occasionally, it is impossible in the moment to know the difference. In that still point before action and motion, the decision is reduced to the level of trust we have in ourselves, our belief in our abilities, and a willingness to suspend self-doubt.

Each student when enrolling at New Hampshire Community Technical College at Claremont has experienced such a moment. And having made the decision to become a student, we encounter it every time we are presented with yet another challenging concept or idea that we must grasp. Every professor, who stands before a new class of students each semester who must decide the best method to impart their wisdom and to open up the minds of their hesitant, fearful, and new-shoes-tight students, has experienced it. Every administrator, who has conceived a new direction in education and who in seeking acceptance of this idea must generate cohesion and consensus amongst the multidirectional energy-particles known as professors, has experienced it.

My uniqueness as a person is defined by the story of who I am. My life's story consists of the choices I have made and of how these choices have affected the direction my life has taken. I have been told that I am inspirational and that the journey of my life is one people regard with amazement and admiration. I still have difficulty accepting this truth and that who I am is worth this regard. One explanation might be that I have been just too caught up in living this amazing life to take a moment to slow down, sit still, and allow myself to take a long, hard look.

Only in the past few years have I undertaken the intense, soul-searching process of deciphering the underlying motivation for my choices, past

and present. This effort has been enhanced by the newfound gift of reflection through writing. Using this medium, I have released deep, long-held emotions and gained new insights into the events that shaped my life. With this earned objectivity, I have been able to remove the filters of negativity and free myself from the mind-set of a victim.

I must add, here, that those of you who were my classmates in Composition I probably thought that my life consisted of nothing but a chain of huge, dramatic, and horrendously traumatic events and that I would never be able to read a paper completely through without bursting into tears! Thank you for your patience and understanding.

All stories have a beginning. Please allow me to lead you to mine so you might understand how these separate threads of moments wove together to forever transform my heart:

I was seven years old, an age when there is only a faint line drawn between what is real and imaginary. For children, the imaginary world can be as real as the person sitting next to you. It is a time of infinite possibility and no child ever, and I repeat, ***ever*** should be told that what they are dreaming or imagining is silly, not real, or outright impossible. For that is simply not true.

The year was 1959 and my fellow first grade classmates and I were assigned the task of creating a report, complete with an illustration, of what we wanted to be when we grew up. This was not a difficult assignment for me, except possibly the drawing part, for I was very clear about who it was I would be. I wanted to be a doctor, not just a regular doctor, but a highly skilled surgeon. I was a little anxious about the amount of schooling necessary for the training, but my excitement and certainty of the result overcame my worry. I spent hours creating a detailed drawing of my operating room, complete with the many different types of equipment that would be necessary for sustaining life, the special team of nurses and doctors that would be needed to complete a successful operation, and finally, I carefully constructed the image of myself as a surgeon: my gloved hands poised in readiness over my patient, the shining scalpel held deftly in my right hand. One aspect of this picture that makes me smile in amusement today, is the bouncy, brunette ponytail springing out from beneath my green surgeon's cap! How pleased I was with the result; how sure I was of its future reality.

The first doubts began to pick at my confidence when I proudly showed my report to my Mother and then to my elderly first grade teacher, Mrs. Smithfield. Both of their responses undermined my trust

in possibilities. Their words echoed each other's: "That is a wonderful report, and you have worked very hard on it, ***but it is very difficult for women to become doctors and women certainly can't become surgeons***." I was devastated, and in that moment of facing their disbelief, I felt my dream begin to shrivel.

I grew up in a family with an actively drinking alcoholic mother who taught us denial by living in her own. Denial is crazy-making process: one by which my sisters and I were taught to deny the truth and were rewarded for dishonesty. By the time I reached the age of seventeen I was a confused and lost soul, doing my best to survive on a foundation of never-ending shifting sand. I sought love and attention in whatever way I could find it, and my dream of being a doctor had all but disappeared.

In what was to become the first pivotal moment in my life I became pregnant in my senior year of high school. Shrouded in shame, and forced yet again into living in denial, I was not allowed to graduate with my senior class, and I had to finish my classes at home. The only option presented to me as a solution for my pregnancy was to place my baby for adoption and to pretend that this most sacred of moments, the creation of new life, did not ever happen. This moment heralded what I call "my dark years". All hope of achieving my now distant dream of becoming a physician was, for all intents and purposes, dead, dead as my wounded and grieving heart would become as I began to do whatever I could to numb it.

Not everything during these years was dark and destructive. There were brilliant, stellar and unforgettable moments as well. Living and homesteading in Alaska, one of the most pristine and beautiful places on this planet, captivated a piece of my soul and continues to call to me. Another bright moment was waking up from a coma after hovering for two weeks between life and death, knowing I had survived spinal meningitis and had been granted another chance. Most precious of all was the glorious moment of miracle and redemption when my second son, Cheyenne, was born. His perfect small body, when he snuggled close, warmed the indifference of my heart. However, these rare and cherished moments were overshadowed by my now-ingrained habit of denial and the addiction to alcohol that fed it. During these years I was making no choices, just reacting to whatever life was throwing my way. Each night I would sink into blessed oblivion, and the first morning's light would find me wondering how I ever would make it through another day.

In the early eighties I began to wake up. My recovery from alcoholism and the daily battle to attain sobriety began in the moment I reached into the drawer where I routinely hid my wine bottle only to discover a note written by 12 year-old son and savior, Cheyenne. He begged me to stop drinking and with wisdom that no adolescent should ever be forced to acquire, assured me of his unwavering love and desire to help. His time-stopping words of truth finally penetrated my heart's tough shell. I heard him and I stopped drinking. It was during this time that my second husband Eric came into our lives and *stayed*. He is the most non-judgmental and committed man I have ever known. His unconditional love and staunch willingness to see and relate to the best of me provided the solid foundation I desperately needed on which to build my new life. I became an Emergency Medical Technician in 1981, and it was in the giving to others to ease their pain and suffering that I began to heal my own. My Mother joined me in recovery, and we began to cautiously repair our bruised and battered, almost non-existent relationship. The first faint glimmers of hope for my long-forgotten dream tadpoled their way back into my heart, and my life began to move forward.

These successes fueled the courage necessary for me to continue to press forward. It is said that trust is the result of a successful risk taken. With this newfound trust in myself, I took bigger risks. I volunteered more time and involvement in rescue work. I became a crew leader for the Student Conservation Association, leading two-month long trail restoration projects with high school students in the backcountry of the Kenai Peninsula, in Alaska. In 1994, I trained daily for more than six months, pushing my physical limits to climb Aconcagua, a remote peak in the Andes of Argentina, whose elevation of 22, 835 ft. makes it the highest peak in the Western hemisphere. These years were times of intense and rapid learning for me. The more I opened my heart to take in these experiences and the emotions unleashed by them, the more my heart expanded to fit these new, hard-won dimensions.

In June of 1996 I experienced the second pivotal point in my life. I was diagnosed with breast cancer. A panic-driven rush to eliminate the enemy with three surgeries and six-weeks of daily radiation rapidly followed the initial paralyzing shock of the diagnosis. Then I took a deep breath and with the help and tireless support of family and friends began my journey back to wellness. It may sound strange to say it, and I always evoke a few raised eyebrows when I do, but cancer has been a

gift. It forced a choice between life and death. I choose life. It compelled me to eliminate the superfluous and retain only what was most important and essential. Accepting the prospect of death and realizing that I could ***choose*** to live was a celebratory rebirth of momentous proportions. It left me with a steadfast resolution that I will not spit in the face of my God by frivolously wasting any of my remaining moments. Cancer motivated me to take two more huge risks, the scariest and hardest so far.

In 1997, I began the search process for the son I had never seen. In 1970, the year of his birth, it was believed it would be less painful for me, as young mother who was placing her child for adoption, if the mirrors in the delivery room were turned away so I could not see, and drapes were placed to block the view below my waist. I only knew my baby was alive by the loud and lusty cry that pierced the barrier that separated us. After an emotional roller coaster ride of searching I found his adoptive parents and on my forty-sixth birthday, my first-born son, Douglas Scott Duncan called me. The wheel of faith and trust had turned, and grace and gratitude flowed into my life. Although we have yet to meet, we have talked extensively on the phone, and I am elated, anticipating our meeting and yet content to know he is alive and has grown to be a good and caring man.

The second risk cancer motivated me to take brings me full circle to the reason I am speaking with you tonight. Cancer melted the remaining pieces of icy numbness binding my heart, and the elixir of new hope reawakened my almost lost dream of becoming a physician after forty slumbering years.

In August of 1999 I walked through the front doors of this remarkable college for my initial interview. With apprehension I answered the simple question that was asked of me:

"What are your long term plans in coming to college here?"

My shoulders tensed in anticipation of the reaction I expected, "Medical school," I hesitantly replied. "I want to become a doctor."

The reply came quickly without a hint of disbelief,

"That's wonderful; how exciting for you!"

Thinking back to that moment, I can only shake my head in rueful remembrance. Where were these unconditionally believing and supportive people forty years ago?

That initial interview set the tone for my experience here at New Hampshire Community Technical College. I have been expected by every

one of my professors to do well, to give the best of myself, to strive not necessarily for perfection but for excellence, and with the support of their unwavering confidence in me, I have.

My first semester was all about learning how to learn again. I imagined my brain as a series of rusty, long idle cogwheels struggling to break free of years of acquired sediment. How I longed for a can of human friendly WD-40 that I could spray into my ears and speed this painful process along!

Slowly, the neurons remembered the old pathways, and even more surprising they seemed to be forging new ones. I began to see patterns of interconnection between all that I was learning. A concept from Conduct of Science would pop up in a slightly different form in Biology. In undertaking the study of grammar for writing I was amazed to discover that Algebra is also language with its own grammar and syntax. These connections have expanded out into my everyday world, to the point where I feel a constant buzz emanating from that long-dormant area between my ears, and a day doesn't go by that I haven't gleefully discovered yet one more new connection.

I have fallen madly and passionately in love with learning, and fortunately for me, my dear husband Eric, in addition to all his other wonderful qualities, is not a jealous man! This joyful new love has removed all traces of fear for new learning challenges and has allowed me to achieve academic heights I never dreamed possible. One of the greatest incentives for continuing in this new direction occurred this past April 4th-7th, when my husband and I flew to Chicago. I was acknowledged and presented my scholarship award as the 2001 Centennial Scholar for the State of New Hampshire in front of an audience of 2,000 deeply dedicated and respected administrators and professors of the American Association of Community Colleges and the Phi Theta Kappa Honor Society. In that moment I took my place in a world I believed was forever closed to me.

How amazingly wonderful it feels to be standing here in my cap and gown, moments away from graduating. How validated and worthy I feel. I have earned my place here, and in gratitude I take it. How confident and eager I am for what tomorrow will bring. To quote one of our cultural icons, "what a long strange trip it's been..." but I would not change a moment of it.

In conclusion, I would ask that the graduating class of 2001 stand. Remember back to the times we stood and faced our fears together, the times we reached out and asked each other for help and were received with a smile of understanding, followed by an unselfish giving of precious time. Reflect back to remember each of those times for it is in those moments that we changed forever the directions of our lives. Please take the time to turn and acknowledge one another for the sharing of this remarkable journey.

Now turn and let yourself take in the smiles of pride and absolute joy that are beaming to you from the eyes and hearts of our husbands, our wives, our children, and from all of our families, friends and loved ones, whether they are here with us or not.

And finally, let us turn to our professors and administrators and let them see our gratitude and our celebration. For we are their hopes and dreams, the reason for their devotion to excellent teaching. Let us acknowledge their sure, steady hands and hearts that masterfully guided us as we hesitantly stepped onto our now-assured paths.

And so, class of 2001, hold your heads up, let our joy pour forth and feel proud of all we have accomplished, for *this* is our moment...and we are ***shining***!

ART AND NURSING

Karen A. Noonan and Wendy A. LaBelle

OVERVIEW

Nursing students are often more comfortable in the medical/surgical setting than they are in the psychiatric setting. They think that medical/surgical nursing is a "black and white" world where an action has a predictable reaction or an intervention has a definite outcome. In psychiatric nursing, action/reaction are not so definite or predictable. Nor is there necessarily a "correct" intervention for a given situation but rather a variety of options based on the nurse's individual style, experience and use of self. This is the "grey" we learn about in psychiatric nursing.

PURPOSE

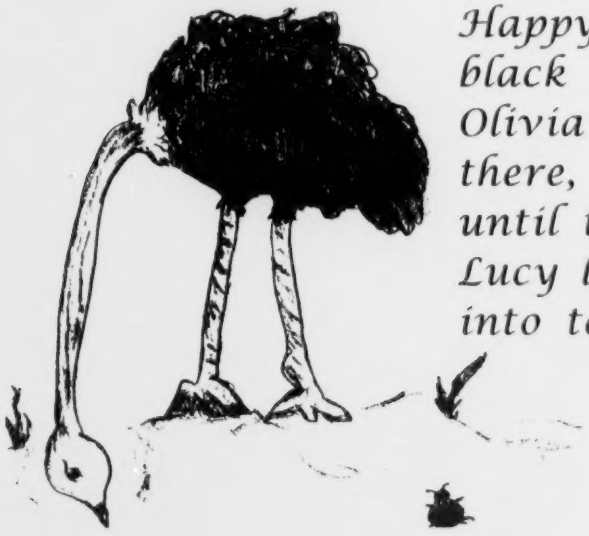
At the end of my students' five week psychiatric nursing clinical rotation they must terminate the experience. With the patients, this involves summarizing the experience, identifying what was helpful to them, exploring how the experience can be helpful to them in the future, and saying good-bye.

The students also have to terminate the experience for themselves. There are many ways to say good-bye, for example, in word, in music, in dance. I have them create an art "termination" project depicting their experience during the rotation using a means other than the spoken word. They are given a sheet of paper and colored markers and asked to express in any form what the rotation was like for them: how they felt, what they thought, what they learned, etc. In order not to influence their creation, the directions are deliberately vague.

When the students are finished drawing, they explain their picture to their classmates. The pictures generally express what was learned, who was helpful, how they felt coming into the rotation and how they feel as they leave.

Wendy created this wonderful analogy as her termination project for psychiatric nursing.

I think it honors all those who struggle with mental illness and those who support them in the struggle.

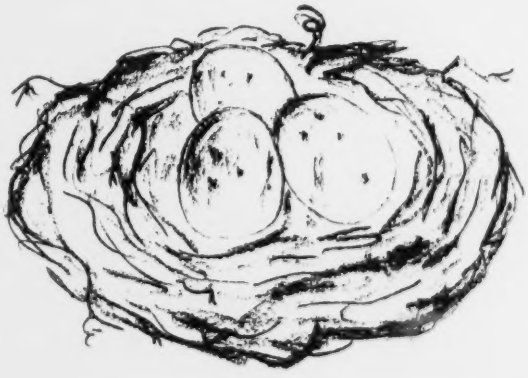


Happy was she in her black and white world. Olivia Ostrich felt safe there, comfortable — until the day little Lucy ladybug moved into town.

Lucy certainly looked different. Sometimes her behavior was peculiar. At times she was disruptive. Often she preferred to play alone.

Despite their differences, Olivia & Lucy became friendly neighbors over the years. And so it is that we find Olivia ready to have her own family.

She lay her eggs carefully in the nest — protecting them from harm. Grey, she thought. She would teach them all about grey!



I DID

Tammy Ashley

Learning and teaching styles are as vast as the individuals involved. How can the teacher reach as many students as he/she is able in the technological age in which we live? What methods should be used? Teaching styles remain in the variety of lecture, discussion and/or the occasional hands-on model. I have always believed, ideally, a teacher is responsible for reaching every student. I am not disillusioned into thinking that it happens, but rather I pride myself in trying to reach as many students as possible. Join me on a trip into the classroom as I share with you some of the methods I use to teach various courses. I find them to be interactive and successful, and I hope you will as well.

First, let's take a look at my Internet Technologies course. Our day begins with current events in technology. This discussion usually will last 45 minutes or longer depending on what is happening in the "real world". This past semester we were able to follow the events that were happening with Napster. Napster is a music file-swapping service that has been in and out of court for copyright infringement. Next, we proceed to the lecture portion of the day. Students are very much a part of the discussion, in most cases because of their experiences. Finally, the lab portion of this class is usually an investigation of various topics and Internet-related sites that help students find resources they can revisit as needed. Students are often able to find software or applications, which they may use to make their lives easier. My main goal is to decrease the intimidation that the majority of them feel. In addition, I give them the tools to make researching topics for different subjects easier while also preparing them for upper-level classes. The web sites broaden their ability to locate material and help assuage their fear.

What happens in a programming class? In Web Programming I, after introducing what the topics for the day are to be, my students and I, together, create a web page. We use the tags they are learning for that class. I find that when they work along with me, they can instantly see how the tags are used and where they are located on the web page. Even when we are doing things such as creating image maps, we go through each part of the exercise together, step-by-step. They read about the tags, and then we use each tag in the lecture. In the lab portion of this class, students have to create a new web page using all the tags that were just introduced. They will also have to research sites to look at page design and to find resources for various items such as graphics, movies, and/or sounds.

Another programming class that I teach is Programming I with Visual Basic. Visual Basic can be very complex for many students. My approach here is to use a combination of lecture, demonstration and code reading. Lecture and demonstration are self-explanatory. Code reading requires that the student work through the code a portion at a time and explain what is occurring. These examples often help students understand concepts better and aid them in writing their own programs. Moreover, I try to emphasize that they need an approach for creating their own programs. For example, go through the following checklist:

1. What is the problem?
2. What do I need to solve the problem?
3. What does the form look like?
4. What are the names of the objects on the form?
5. Write a psuedocode, a flowchart, or a hierarchy chart to diagram what the program is to accomplish.
6. Code and debug.

If they use an approach such as this, I find they are more successful in writing their code and learning the concepts they were taught.

What is a software application course like for students? Let us visit an Excel class. Each class introduces more complex concepts. Again using my computer projector, the students and I will create different spreadsheets using the concepts from the chapter we are working. Often I will interject with points on the board or use different examples of how the concepts relate to real-life situations. Sometimes I am fortunate enough to have students working with the software either in a present job or perhaps in another class. Once our lecture and demonstrations are done, students are asked to complete several assignments to reinforce the concepts. Another interesting exercise comes at the end of the course. Students are asked to do an essay on how they would use Excel in real world applications. They may use their own experiences, talk about how they believe they are going to use the concepts they have learned, or they can interview people who are using the software. This exercise is extremely insightful for my students. I also benefit a great deal from their work!

So my dear colleagues, the keys are not just lecture, but I DID (Involvement, Discussion, Instruction, and Demonstration). Let your students work with you and take part in their learning. They will appreciate you for it.

PORTRAIT OF A TEACHER AS AN ARTIST

Paul Marashio

Thinking of myself as an artist seems farfetched. I can't draw! I can't sculpt! I'm no architect! Even when my mind's eye scans the definition for Pedagogy, the art of teaching, I ignore it. This is not me. When I hear words "art" and "artist", I see a clear image of a solitary creator working in a studio or at the seashore facing the scene and the canvas with brush in one hand and a palette in the other. Or I may envision actors on a stage performing a Shakespearean play. Other art forms also flood my mind. Probably my stumbling and bumbling during my awkward novice years searching for my teaching identity and signature retarded my perception of teacher as artist.

Early in my teaching I stumbled across the image of the teacher whose teaching aspires to art in a John Steinbeck novel whose dedication declared teaching as art and a good teacher as artist. With this attribution tugging at my mind, I now conduct my first exploratory journey into the world of teaching through careful introspection and retrospection to encounter the artist within me.

Every human being has an internal creator patiently waiting for a call to action. Like the Diné (Navaho) woman who calls upon spider woman to help her weave beautiful rugs, or the Greeks who had their muses, the teacher can also call upon the inner creator to assist in creating curriculum. During the early developmental stages as the teacher designs a lesson, the artist within is a writer painstakingly composing an intricate narrative script diagramming a complex learning drama. This narrative guides the teacher in delivering the content through several competencies and instructional modes. Finally, the artwork is complete when the teacher designs an evaluation mechanism that carefully measures the competencies. Like Michelangelo standing over a slab of marble and seeing a captive encased inside ready to be freed, so it is with the teacher staring at a blank sheet of paper and seeing a captive unit of learnings held hostage waiting to be freed.

The artist, working within specified constructs, creates art. The teacher as artist must choose specified constructs too. Jerome Bruner gave me my major learning construct in his classic educational treatise, "The Process of Education". From his discussion of process emerged a framework upon which I design and construct my teaching, a framework I

entitle a teaching/learning process model. Alongside Bruner I owe a debt of gratitude to Mortimer Alder's "The Paediea Proposal", which I integrated into my education frame and which laid out an instructional triad model that includes didactic, coaching, and seminar. These two complementary constructs allow me to remain faithful to the teaching/learning philosophy. I also aligned Socrates and Plato who assert that students have the ability to be both teacher and learner. From these four educators I crafted a substantive teaching/learning construct from which my teaching art flows.

Transformation, transference, and transcendence best describe what happens to everyone when these educational constructs are launched. Both teacher and students are transformed into actors in a learning drama, transcending their traditional teacher/student roles. Frequently the teacher artist challenges each student to call upon their individual inner creator to contribute to a dynamic work of action art. Through this collaborative engagement, between teacher and students, students are propelled on a discovery voyage to the destination of illumination.

Through this interactive creativity, students are participatory learners intellectually engaged in the search for data/evidence to solve a problem or formulate a generalization and therefore are simultaneously transformed into inseparable teachers and learners who are transforming lifeless evidence into life giving learnings. Off to the side stands the observant artist teacher, choreographing and orchestrating the student artists by scrupulously coordinating and integrating their art within the larger teacher created artwork.

Allow me to describe this artwork in more detail by starting at the beginning just as the curtain rises for the opening scene of Act One, the lecture. As the lecturer, I am transformed into an actor playing many different roles during the semester. Augustine, Galileo, Darwin, Einstein, Michelangelo are resurrected from the dead for the students to see, hear, and speak to, transferring information to the students. These visiting lecturers are the introductory primary sources for the students who dialogue with these historical figures to acquire additional clarity and comprehension. Lectures are also crafted into briefing sessions, background sessions, and information sessions, that transmit to the students an overview of the content in their preparation for an in depth investigation of printed documents in the seminars, eventually culminating with an investigative report. Carefully crafted lectures that are dramatically ex-

ecuted easily ignite the fires of students' intellectual curiosity. It is the artist teacher as playwright and actor who has transformed the students into active participants.

In Act Two, a series of carefully designed instructional modalities transport students even deeper into unchartered learning frontiers. The craftsmanship of the teaching methods glides along a continuum from simple role play to complex simulations. Oftentimes these type role plays are created to make difficult, inaccessible material accessible. It is at this precise moment, transcending the traditional passive learner, students are transformed into teachers transferring new knowledge to the other learners.

Appropriately crafted simulations advance the students even further into the complexities of the educational materials under consideration. More sophisticated than role plays, these simulations transform the seminar into a virtual world. Even though simulations embody role playing, they go beyond that through the use of a carefully scripted problem/crisis scenario, with clearly designed objectives and goals. Working in teams, the students must complete their respective set of objectives prior to the game's conclusion. With each passing phase of the game the students' journey into this virtual world brings to the fore sophisticated insights the students might not otherwise learn from a conventional methodology. Act Three consists of a mandatory debriefing session whose purpose is to assist students in synthesizing the learnings they gathered from the experiences. During this climatic moment in the drama, I deftly direct the discussion with the purpose of assisting students into crafting the material into a comprehensible holistic picture. To accomplish this, students are assigned to write position papers or white papers or various narratives/essays, or progress reports, lab reports, or investigative reports delivered as oral presentations and arguments to the seminar. Over the years I discovered writing teaches teachers and students to organize the material into a coherent whole that helps them to discover what they think and to think critically about the material. As the curtain descends on the Final Act of this learning drama, the teacher's art has coalesced teacher and students into an academic community where vigorous intellectual engagement is the norm.

From start to finish the seminar dialogue transforms the classroom into guerilla theater. Everyone on this stage are actors improvising the script through research, with the teacher artist transformed into director, playwright, actor, stagehand who provides artistic context for the students. Once the teacher artist displays the art work, the students are empowered and encouraged to participate in the creative process. Like abstract

art there is much ambiguity that fills the air inside the seminar room with anxiety, anticipation and excitement. Everyone is primed to begin this artistic journey into an educational unknown whose port of call is too great a distance to be seen. Only after the students wade through layers upon layers of new learnings will their learning voyage bring them to this final destination: illumination. Standing to the side is the playwright masterminding the unfolding learning drama.

Learning within a confusing, ambiguous, formless, shapeless world waiting to be formed and shaped by the learners is daunting for all the participants - teacher and students. Yet, as the seminar percolates, the students come to life, brimming with anxiety and excitement. The artist teacher in the roles of motivator, facilitator, director, playwright, and actor, deftly moves the art work forward to completion. This artist teacher with precisely crafted questions helps the students transform content into analyses and interpretations, giving form, perspective, proportion and composition to the large body of evidence. Through this dialogue the artist teacher creates a mosaic of ideas.

Before you undertake this artist adventure I should warn you that once the inner creator is awakened, the artist is often beguiled by their creative gifts. Constantly poked, prodded, shoved and encouraged, the artist has no choice but to comply to the inner creator's insatiable desire. Do not resist the Creator's force. Make a friend of the inner creator, embrace it, and let your teaching become an imaginatively executed piece of living art that gracefully immerses everyone.

After these many years of teaching, I am finally convinced of the efficacy of teaching as art and the teacher as artist. After many years living in a self-imposed denial, I have recently come to the fullest of realizations that teaching is an art, and the teacher is an artist. Maybe this newly heightened awareness is the result of me stepping outside of my teacher's body to objectively observe myself teaching, beginning with the designs of a lesson or unit materials right on through to the actualization, assessment, and reflection of the teaching. As revealed to me in this out of body experience, I am an artist simultaneously creating within several different art forms. I willingly surrender to my inner creator. Since the inner creator has taken me on a magical mystery tour, I will continue to create intricately ladened works of art for my students.

Through this portraiture of a teacher as an artist I have come to see myself metaphorically as a weaver who weaves or continues to weave beautiful tapestries.

TEACHING DEVELOPMENTAL WRITING: SENTENCE DIAGRAMS AND THE WRITING PROCESS

Marion B. Schafer

Thirty five years ago my classmates and I couldn't help smiling when our eighth-grade English teacher stood on top of his desk to read aloud our writings, giving them no less authority than he gave the sentences of Scott, Dickens, and Twain. Fearlessly we wrote for the audience, for we knew Mr. B. would be soliloquizing our pages. He aimed to foster our confidence and our enjoyment of language, and while he encouraged smiling, he shot anyone who ridiculed anyone else—he kept a banana in his desk drawer for that purpose.

"Bang!" he would say, taking aim with the banana.

Grammar, though, was more tedious work than writing for an audience: Mister B. taught us the parts of speech, and we diagrammed the structures of sentences.

We drew horizontal foundations for the subjects and verbs. We partitioned off direct objects and other complements. We embellished our diagrams with hanging baskets: adjectives and adverbs, prepositional phrases and participles. We built towers to hold infinitives, and we constructed double- and triple-decked parking garages for the parallel clauses, phrases, and modifiers. We annexed our main clauses with subordinate ones as we covered blackboard after blackboard with the soft, yellow-chalk designs of ideas.

We learned especially not to dangle modifiers—lying little words and phrases stuck onto the wrong things in a sentence: *Wanted: a piano by an old lady with carved legs.* Even though images of our fourth-grade music teacher played in our heads, we suspected that *with carved legs* probably misrepresented the truth. "Dang. mod.!" Mister B. cursed, beating the phrase from the board in clouds of yellow dust and relocating it near the piano. Sometimes he squeaked the chalk on purpose.

I loved Writing and Literature, but I thought Grammar was too structured, so when it came time to sign up for a high-school curriculum—either College Preparatory Scientific, which emphasized lab work, or College Preparatory Classical, which emphasized languages—I chose Scientific. When Mister B. asked why, I answered that I thought grammar was boring, thank you, and I'd had enough. I thought science would

be much more interesting. He accepted my reasoning without comment, even though he must have known that the choice would affect only my first year of high school. A new high school with a new curriculum was being built, and in our second year we would move into it, where he would be moving as well.

Four years later as a senior at that school, I found myself in Mister B.'s Writing class again, where I learned to write again. He didn't shoot the class with bananas, and he didn't make us diagram sentences. Instead he made us purchase, read, and write in Strunk and White's Elements of Style, a book that does what it tells its readers to do, and does it cheerfully: "Every writer, by the way he uses the language, reveals something of his spirit, his habits, his capacities, his bias. This is inevitable, as well as enjoyable."

Enjoying ourselves or not, we wrote a paper every day. For Mister B. that meant fifteen papers to read and comment on every night, and he did it faithfully. Sometimes the papers were terrible, but we cranked them out anyway. The important thing was, he kept us writing, kept us messing with words and sentences, kept us fearless and smiling. If I hadn't taken Writing, I would have taken physics, which met in the science lab during the same period. But I was moving too fast for calculations and lab reports. I enjoyed writing my own truths and telling them in other people's heads. I enjoyed having the last word. Writing was power—and freedom I found nowhere else.

It was freedom especially from the grades that governed my life in other classes. Mister B. did not grade our daily papers, so we were forced to pay attention to his comments, which were often humorous and less concerned with right and wrong than with making choices. Had I noticed, for example, that although this was a sentence fragment, it probably worked better here than a complete sentence could have? Well, no. But I did the next time and every time after that.

What I did not understand until much later was that many of the others in my class were not there because they loved to write but because they hated to. This was one last chance for them to learn, far away from the required English courses they had to pass to graduate. Here they were safe: as long as they kept writing, they could do no wrong.

I also did not understand that besides teaching writing—or allowing me to learn for myself—Mister B. was also teaching how to teach writing, even to those who hate it.

27A

Now I understand—that we write best about what we know and care about, that correction is useless without motivation, and that confidence in oneself, one's mind, and the power of one's words is what separates the writers from the typists. I understand also that most people have to enjoy writing or they'll talk on the phone instead. And I know all kinds of popular methods-phrases Mister B., now retired, probably never bothers with when he talks about old times: "writing process," "developmental writing," "conferencing," "portfolio evaluation," "multiple drafting," "whole language," "writing workshops," "peer editing." Still, he used those methods, every single one. According to most of my colleagues, thirty five years ago was a dark age in the teaching of writing. Could have fooled me. That's when the light bulb came on in my little closet, and Mr. B. was pulling the chain.

Still, I was haunted by sentence diagrams. Every time a new acquaintance discovered that I taught English, I was asked, "Do *you* make *your* students diagram sentences?" I always answered, "Nah, we don't do that any more. It's useless. In fact, we don't even teach grammar any more. We teach The Writing Process." My new ally would then rest assured that students these days are being spared.

Even though it was true that now and then I had drawn pictures to show students how basic structures convey meanings, I never drew the diagrams of eighth grade. They were too tedious and too complicated, and my experience proved it.

Until one fall, when after more than twenty years of teaching I took a graduate course in language science at Harvard. At the start of a lecture on syntax, my professor talked about Noam Chomsky's book *Syntactic Structures*, which I had read twice the week before. A book of arrows and parentheses, capitalized algebraic variables and Greek symbols, it is supposed to make sense of grammar and sentence structure. After two unsuccessful readings I was confused, and I hated it. I sat in my chair hanging my head.

"How many of you remember how to diagram sentences?" asked my professor.

Perking up, I raised my hand. A lot of other people raised theirs, too.

"Good," she said. "That's where we begin . . . ."

Starting with horizontal lines, she drew deep and surface sentence structures, turning them into upside-down, flowering sentence trees on blackboard after blackboard, leading us among the branches of structures

we understood and into the concepts that had evaded us. I cringed. In quite the same way and for quite the same reason, though with much less sophistication, I had been diagramming sentences for my own students all along, but I had been misrepresenting the truth, lying to myself and to others. Here I was—an old lady with carved legs, dangling my modifiers, looking for a piano.

Since then I have mended my ways. I now understand that somehow or other The Writing Process must include learning to manipulate language structures, for on those structures ride our very ideas. The more structures we know how to use, the more choices we have, and the more we can say. Students in developmental writing classes have often missed or avoided experiences (some, tedious ones) that could have given them more structures to choose from, so they have no confidence about building bridges from their thoughts to the thoughts of others.

They hate to write.

When they are finally ready to learn that writing is less about right and wrong than it is about making choices, I say, "Each sentence makes a picture in your reader's head. The picture has a structure, and you can change that picture by adjusting the structure of your sentence. Watch this. . . ," and I sidle over to the blackboard to prove it. I diagram my students' sentences, dangling elaborate curlicues from base lines. Sometimes I write the sentences, diagram them, then illustrate them with stick figures: Noam biting, a dog biting, Noam being bitten by a dog, a dog being bitten by Noam. I am not a very good artist, and my students have never heard of anyone named Noam, so they smile at the antics.

My students have never heard of Mr. B., either. I don't carry a banana, and I don't have a desk big enough to stand on, but I do my best under the circumstances.

"Bang!" I say, pointing my chalk and drawing more curlicues. They can't help smiling.

28 A

DON'T FILL A VESSEL. SPARK A FLAME.

Larry Carle

ANECDOTE: *Writing teachers who have expertise and experience celebrate their students' writing. From draft to draft, their students write, respond, rewrite, revise, and edit with their peers. As a result, the students take control of their own papers. By doing so, instead of being told what is good, they discover for themselves what is good and why it is so. Rather than finding a disconnection between knowledge and understanding in the writing process, students become the experts of their own papers: They learn to know what is bad writing and needs changing and what is good writing and can be left as it is. These enthusiastic writing celebrants display their love of the writing process in their writing, writing freely on their own, (as they produce hundreds of non-school assignment poetry and essays both before and after graduation) and modeling of various kinds of excellent writing they find in almost uncountable sources. As they see, then, they shape; and as their writing takes form, they expertly decide how it beautifully restricts and disciplines their writing or allows it previously unimagined freedom.*

RESEARCH: In recent years, the move towards centralized school reforms has taken on more and more momentum. Many states are now emulating the Texas Accountability System, and much of the enduring legacy of Ross Perot's school reforms in Texas is ... the strengthening of bureaucratic controls (MacNeil 729). On the other hand, it has been pointed out that the reforms' power to create the supposed gains their supporter suggest will follow their implementation has done other than create the hoped for improvements. The reforms have created the very mediocrity they were intended to remove (Gough 722). In fact, some of the key examples, held up as evidence to support the idea more testing and accountability are needed, prove the opposite true. Not finding these reforms producing improvement and excellence, many educators have discovered that good teaching can't be engineered (Gough 722). To the contrary, they have realized a business oriented model of accountability can push good teaching out of the classroom (Gough 722).

ANECDOTE: *On the one hand, a writing teacher will emphasize voice, style, and argumentation, as he firmly believes an essay (and almost all writing stems from the essay) is the written expression of its*

author's opinion; on the other hand, a social studies teacher will promulgate the belief that his template for a five paragraph essay is the most effective way to produce (at least some kind of) writing. The contrast between these voices can be jarring. While they discuss writing, the tone between these two teachers can range from, at best, collegial to, at worst, obscene. Recognizing this is a scene they themselves have played out, many experienced English and writing teachers probably have a similar range of response to this scenerio: At their happiest, they feel glad another colleague actually has enough sincere commitment to endeavor upon a serious educational debate; at their unhappiest, they have strong anger about how anyone from any other department can assume he or she can take on the role of writing teaching expert. Most significantly, they often strongly stand behind the belief that as an English teacher they would not presume, for example, to attempt to tell an experienced math teacher about how to teach high school students the very best way to solve for x in algebra. Indeed, it just has to concern English teachers generally when (whether by implication or administrative decree) noticeably large numbers of educators in their schools assume, agree, or are made to think it is the job of all teachers in their buildings to teach writing and improve writing test scores.

ANECDOTE: *In recent years; educators in the Newport School District, some hamstrung by the need to raise test scores, have searched for ways to cope with outside demands. Responding to these demands and sometimes feeling angered by their students' less than competent scores, they try to do something, sometimes anything. With logic telling them that the methods that came before have produced the lack of skills now surrounding them, they argue all that came before must have led to what now exist. Result: anything, even a little more productivity, is better than what has preceeded and now exists. Other educators, however, find this logic and evidence untrue. They refuse to give in to the stillborn demands of state level testing and accountability reforms. To the contrary, they argue fragmented and narrow information on state assessment tests, unfortunately, substitutes for a substantive curriculum and creative teaching.*

RESEARCH: Teachers know reform movements often are affected by a pendulum swing of interest, suggesting what is fashionable and new now will be out and unfashionable ten years later, yet "the shift in locus of control over curriculum, teaching, and assessment, which began with legislated reforms of the 1980s, has more than persisted" (MacNeil 730).

As a result, a limited set of measurement indicators has become the dominant language in use as education policy is discussed in many states and many towns. Principals, [under even more than the usual demands upon their time and energy,] have reported there can be little discussion of children's development, contributions to classroom knowledge and interactions, or of engaging sidebar experiences at the margins of the official curriculum, the place where children often do their best learning.

ANECDOTE: *Again, while writing teachers will celebrate their students' writing, others will often contend content-based work must take precedence. To the dismay of the writing teacher, this means certain educators believe writing be taught while there is a very unfortunate loss of meaning. They know this illogical connection of methodology and practice is devastating to the young writing student. It creates an unfortunate and tragic disconnection between understanding and knowledge.*

To what extent does this pair of terms matter to the writing teacher? For an answer, let's look to Socrates His words, quoted on the cover of last year's New Hampshire Community Technical Colleges Pedagogy Journal, deserve another close look: ***"Education is the kindling of a flame, not the filling of a vessel."*** *In the concise juxtaposition of "kindling" versus "filling" we find the philosophical core of contention between two teaching styles: The fill-in-the-blank, content-base and understanding-based teacher will push the already ubiquitous writing Band-Aid, his unoriginal template, the five paragraph essay. His template will even supply particular sections with standard opening statements and transition words So be it. But he should do a better job listening to Socrates. His students need to form opinions; they need to think freely. They do not need to fill in blanks as if they were pouring concrete into ready-made, similar-sized empty spaces as a convenient excuse for having done some work. This teacher's template denies individual thought. It requires only facts as answers. But most importantly it demands an incredible death, the death of thought*

Any ordinary sentence is written, lives quickly as it is read and is just as quickly soon dead to the reader's memory. On the other hand, the thoughtful, opinionated and creative construction will take on a life of its own. It will leave for the reader the active image of the living writer long after both his life and his constructed, thoughtful sentence have ended their alloted existence. How sad it is that some want to tear apart understanding and knowledge! They prefer the death and voiceless mean-

inglessness offered by filling in blanks over the memory found in an individual and forever-living idea — which is the beauty found in true knowledge combined with understanding and the perfection that exists in the truely unique idea left at the end of a sentence. It is the created idea which matters, not the shape of the paper, number of paragraphs, or number of blanks that are filled in. These ultimately almost meaningless requirements take shape and die, but they, in and of themselves, leave 110 living ideas behind.

RESEARCH: "A continued legacy, then, of the Perot reforms is that the testing of students increasingly drives curriculum and compromises both teaching and the role of students in learning. This prescriptive teaching... to the fragmented and narrow information on the test comes to substitute for a substantive curriculum in the schools of poor (and minority) youths. ..., but the high stakes attached to the scores have made many schools replace the regular curriculum in minority students' classrooms with test-prep materials that have virtually no value beyond practicing for the tests. The scores go up in these classrooms, but academic quality goes down. The result is a growing inequality between the content and quality of education provided to white, middle-class children and that provided to those in poor (and minority) schools" (MacNeil 730).

In particular, assessment testing and the resultant curriculum and teaching compromises can dramatically change a school's and a teacher's approach to teaching writing. The ubiquitous essay writing sample found early in many standardized tests obviously requires practice and preparation. The result: **formulaic writing** (Halbrook 9).

"What is formulaic writing? Closely akin to relying on a cookbook..., formulaic instruction focuses on an important goal — to serve as a foundation for beginning writers. Rather than working with those rhetorical elements with which a writer builds, the instruction centers on developing enough knowledge of paragraph development and organization to produce the required piece of writing" (Halbrook 9).

".... Faced with a specific writing assessment, instructors rely on the famous and often-applied 'quick fix.' Mindful that most of their students writing is an involved process for which time is limited, many instructors fall back on the tried-and-true outline to writing" (Halbrook 9).

General rules are followed: restating the topic in one's opening paragraph, having a specific number of paragraphs, providing several specifics... to support one's thesis, having a predetermined number of sen-

tences in each paragraph, and using transitions. The last skill frequently advocated in such an approach involves the restatement of the first paragraph in the final paragraph. But this form of writing regularly ignores the two most important elements to creating a piece of writing: audience and purpose. The result is an amorphous piece of writing, one loosely defined, a deadening effort that takes few chances with language; so the writing is predictable and lacks individuality (Halbrook 10).

ANECDOTE: *On the other hand, those writing teachers who are celebrants of students' writing— on edge in some cases over the threat to real writing and real understanding and knowledge — react to the killing of creative ideas with special horror. To a certain extent, a growing number have doubts about national assessment testing trends and local assessment testing policies, especially when they ignorantly promulgate mostly useless five paragraph essay templates. It is increasingly clear that assessment tests and preparation for assessment tests (like New Hampshire's, for instance,) are a critical obstacle to teaching writing with understanding and knowledge connected meaningfully. The reasons the celebration of students' writing by students and teachers has often been neglected are not always understood, even by many educators who have special interest in their students.*

However, the demands of assessment testing and writing templates are provocative to students, parents and all educators in a way they would easily understand if something similar happened to them. Imagine discovering one day that New Hampshire's state government arbitrarily put into effect laws demanding each community has the exact same educational philosophy, facilities, curricula, books and pedagogy. (Let's not muddy the argument by bringing in a who-knows-how-complicated a discussion about how only-God-knows what kind of taxes would be created to pay for this imagined uniformity.) This image is mirrored in the deconstruction caused by the teacher who requests his students draw the same picture of the same size house with the same number of windows and shape and with the same-colored crayon as every other child has been demanded to do. These demands would be not only an ideological obstacle to his learning how to write, but a physical one.

The best chance to get out of the present state of disconnection between writing and assessment is teaching centered upon the student and celebration of the student's writing The following poem is left as evidence, evidence of writing done by a poet who wrote for herself not an

assessment test. She celebrated it in class, expressing a desire to have it published. And that she did! Though not an essay, it should be remembered that an essay is the basis of all writing. Certainly her construction here has attitude, as would any well done essay. It, among its many other successes, also has a unique viewpoint and imagery. Her beautiful ideas will live on despite the song's lines ending. She has constructed rather than having been deconstructed; she has shaped her own thoughts rather than having been limited to someone else's content-based, fill-in-the blanks template. This writing is the opposite of death and voiceless meaninglessness; this is the writing of an author who has sparked and brought to light a forever-living idea found in her memory. Her great success very much comes from writing teaching that celebrates the student and the student's writing.

Thinking of You

A tear slips slowly
down my face
As memories start
to flow
Of views of words
of warm embrace
And times not long ago
A smile creeps across
my face
More memories now
do flow
Of views of words of
a warm embrace
And times not long ago
— Dawn F.

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THE CHANGING CLASSROOM – NOT BLACKBOARD – IN PHYSICS

Janice G. Kaliski

The elevator door opened up revealing, to my complete amazement, my entire introductory physics class waiting for me. I was aghast! I truly had not anticipated the entire class to attend a scheduled one hour review for the final exam. In fact, one of the students had even asked me if the review was optional. Given the past enthusiasm (or lack thereof) of previous classes as far as final reviews go, I had expected two or three students might take me up on my offer to review with them, not all of them. And, what about all those large smiles on their faces?

What caused this change in behavior on the part of these students? Could it be that the new approach I had adopted in Physics 100, an introductory physics course, was responsible for this sudden interest in succeeding on the final exam? Could this really be the reason? Had the students really benefited to the extent I hoped they would from the new approach I had adopted? The possibility sent me into a tizzy of delight. I guess all of my efforts had not been in vain after all. My, my!

THE BACKGROUND

In June of last year I made the decision to incorporate Hands-On-Physics projects into my classroom. Why? I was enticed by the promise HOP offered teachers if they adopted this approach for learning physics.[1] I was attracted to the features: the well-thought out sequences within the hands-on investigations and the possibility of building more advanced experiments out of inexpensive apparatus. To learn more about HOP, I attended a workshop offered by the Concord Consortium at the Springfield Technical Community College in Springfield, Massachusetts last May.[2]

All those who attended the workshop emerged with some basic knowledge of the methodology required for incorporating HOP into the classroom, along with some first-hand experience building examples of the apparatus that would be used. Those in attendance were divided into four teams who then competed against each other to test out the apparatus built. Looking back now, it is easy to see why I got completely wrapped up in the spirit of it all...the process, the competition, and the thrill of victory. But, most of all, I ate up the challenge to my intellect. It was wonderful!

[1] JaniceG. Kaliski, "THE CHANGING BLACKBOARD IN PHYSICS," PEDAGOGY JOURNAL, 7 (October, 2000): 25.

[2] ibid., page 27

I made the decision to "try-out" HOP based on my very own experience at the workshop. I was sure that the students would buy into it as readily as I had. I was convinced that the students would be so absorbed that they wouldn't notice learning was taking place until after it had occurred. I also felt that the high price of failure might be reduced once the students bought into the practice of amending and/or revising their plans as the solution became more apparent to them or as they gathered data from other sources. In addition, I hoped that they would come to appreciate the skill of fine tuning their solutions to an investigation or their prototypes as they went along .

My intention was to use Blackboard.com as means of communicating with the students when I taught HOP units.[3] Consequently, as a result of this action the blackboard would change from its typical traditional form into a new split form composed of the slate blackboard (or in my case, a white board) and the electronic blackboard via the computers at the lab bench. Was I out of my mind? Did I really think I would be able to pull that off?

THE REALITY AND THE ASSESSMENT

Not to rain on my own parade, but things did not work out as planned. The old saying, " my eyes were bigger than my stomach," certainly applies here. I bit off far more than I could possibly accomplish given the circumstances. Am I disappointed? Not really, because there were many highlights that I shall long remember, especially that big surprise of so many students wanting to attend a review session. And, change had been accomplished in my classroom when HOP was integrated into PHYS 100 as part of the standard curriculum for the conceptual based course.

Judith Collision, administrator of Hands-On-Physics for the Concord Consortium outlined six HOP potential benefits for students taking a HOP physics course. Participating teachers were asked to evaluate HOP Projects by rank ordering from 1 to 6 these benefits as they apply to their students. My ranking of the benefits follows:

Rank	Benefit
1	working in groups
2	solving problems
3	designing and carrying out experiments
4	challenging and resolving alternative conceptions

[3] ibid., page 29

Rank	Benefit
5	building technical skills
6	conducting scientific inquiry

I was impressed over how willingly my students accepted both the need to work in groups and the need to divide the work among the members of the group so that each group member was responsible for something. I marveled over the way individual groups went off to design and carry out an experiment. Or, how they would gather information from other sources. More than once, I found a designated group member "scouting" the results developed by the competition to see if any information gained could be used by his/her group.

Were my needs met? In an article I wrote last year for the Pedagogy Journal, I summed up HOP in the following way: "HOP was described as heavily experimental, project-oriented, technological, low-cost, practical to implement, and effective for all students."[4] Now, one year later, with the experience gained from three classes under my belt, I am ready to share my thoughts about HOP. Let's take HOP from the top.

HOP IS HEAVILY EXPERIMENTAL, PROJECT-ORIENTED, TECHNOLOGICAL

I knew from the beginning that HOP units would require much time in the lab at the expense of the classroom. I did not expect this to be a problem for PHYS 100 since I suspected that the students taking the course would rather work with their hands than solve word problems. While there are six units available for HOP[5], I only used two of them and even then, I felt pressed for time. How I wish that there might have been more time to completely do an activity or to try some of the extensions suggested by the students that seemed so intriguing and worth pursuing.

The time constraint issue was a major pedagogical puzzle that I faced all the while that I taught PHYS 100 this year. Do you concentrate on the opportunity in front of you at the expense of the material needed to be covered during the term? Or, do you push the students along so that the material is covered at the expense of any desire to further explore a given topic in greater depth? In my opinion, this dilemma is a major concern.

[4] ibid

[5] ibid., page 26

What I did not expect was the weak skills that the students brought with them to the class. I suspect that this weakness directly impacted the results of HOP projects since time was needed to comprehend the problem and then to apply the concepts being investigated. My students were poor readers, generally disliked math, and lacked critical thinking skills. Plus, they had a novice teacher of HOP projects! The thrust of the activities in the HOP Mechanics Unit was on the development of models to demonstrate motion and the cause of the motion. These models were further developed to demonstrate multiple forces or changing forces. As the process evolved and knowledge required was transferred to the learner, the means to attain the goal of the unit became evident. The purpose of the core project for the Mechanics unit, for example, was to build an aircart.

Perhaps, HOP projects are better used by a higher level physics class rather than in an introductory level class. I do not know the answer to this question. I suspect that a more advanced class would experience a greater time constraint because of the amount and depth of the material to be covered as dictated by the outline for the course. Although students in these more advanced courses already possess the skills needed to allow them to quickly solve on paper any potential problems, they would probably lack the ability to solve the solution with their hands. This factor would then slow them down. Isn't this why technicians do the hands-on work developed by the engineers? Think about it!

HOP IS LOW COST

Incorporating HOP units into PHYS 100 *was not* low cost. Far from it! In order to complete the Mechanics unit, students needed to have available for use three kits; one each in mechanics, electricity, and power. According to the HOP administrator, the respective costs of these three kits were $8.79, $21.40, and $59.15 for a total of $89.34 per team. I anticipated being assigned three classes with four teams per class during the Fall term. The total cost to purchase kits for this term alone was projected to be $1072.08. Expensive!! Would I be able to acquire and maintain a budget to cover this expense? Could I justify this kind of expense?

Several problems surfaced almost immediately. These problems included:

1. I had no way of predicting how much of this cost would have to be re-spent to set up the units for the Spring Term.

2. I did not know whether I could attain parts from other departments at the college, which would help me to reduce the initial cost factor.
3. I was not sure if I could even match the estimated costs for the kits here in the state of New Hampshire since they were based on prices available through the Consortium in Massachusetts.
4. I was not sure if everything that was needed was available in Manchester

I was assured that all parts were readily available, mainly through Radio Shack or Kelvin Electronics. Guess what? They were not. Although I had all the part numbers for items to be purchased through Radio Shack, not all of these parts were available. Substitutions had to be made. I wasn't even sure if I was making the right substitutions. The manager of the Radio Shack in Hooksett took pity on me and went out of his way to help set up the kits. He was extremely helpful at a time that was most stressful for me.

In order to complete these kits I had to run around looking for places to buy some of the supplies, only to discover that these sources were not state approved vendors. To get around this obstacle, I spent money out of pocket when it was necessary, and then negotiated the pay back with the college's Business Office. I was shocked by the entire process of purchasing supplies as dictated by the state.

Fortunately, a generous colleague, Professor Jim Harbison from the Electronic Technology Department, helped me by donating spare parts (wire strippers, pliers, soldering irons, solder, etc.) from his inventory to help me complete my electricity units. All in all, I spent about $900 to set up the kits, which was less than expected. I was promised $100 worth of HOP supplies to support my work with the Consortium. Part of this grant went towards the cost of six propellers that were sent to me when it became obvious that propellers were not available in any nearby hobby or craft stores. Otherwise, I received nothing more.

Overall, I set up twelve kits but I did not consume all of the items within each kit during this first year using HOP projects. This was made possible because I only had one class each term using HOP kits. Consequently, I estimate that it will cost about $500 per year to maintain the supplies if I choose to only teach one HOP class per term.

HOP IS PRACTICAL TO IMPLEMENT

When contrasted to the cost of the recent up-grading of my physics lab or the cost of purchasing the equipment, interfaces, and software to

accompany the new lab, HOP is practical to implement. While the initial costs of implementing HOP were definitely much lower, the supplies are consumable. This means that the cost of maintaining HOP will be on-going as will the need to replenish materials for other physics courses.

HOP EFFECTIVE FOR ALL STUDENTS

The jury is still out on this attribute. Perhaps, after another year at teaching HOP I will be in a better position to assess this point. The first impression I have, based on my limited experience, is that HOP is not effective for all students.

I believe this because of the kind of students who take PHYS 100. The average student could be described as having a low self esteem, poor reading, writing, and math skills, limited critical thinking skills, and weak problem-solving skills. Students come to the class with a tremendous fear of physics because they are afraid they will fail the course and not graduate. Previous students and siblings foster this fear. It is almost as if it is instilled into all the heads of most students at an early age that physics is the course most to dread.

So, those students who have bought into this fear and are doubting their ability to earn a degree in the first place are not going to accept anything that requires that they engage in some independent thinking. They are going to balk and fight the process. Consequently, they will not benefit from HOP, even though they are the ones who would probably gain the most from the experience, given the chance.

Then there are those students who want to better themselves and are willing to make the effort to learn as much as possible. Such students will be a joy to have in class. These students will become team leaders, serve as outstanding back-up support for the teacher, and provide a wealth of assistance for the fellow classmates. In short, they will become the glue that will cement the class together and produce the kind of excitement one hopes will happen in any class.

OTHER FACTORS TO BE CONSIDERED

Once I became involved in HOP, and had agreed to use the materials in my teaching, I was asked to evaluate the effectiveness of the Hands-On-Physics units.[6] Three content tests were administered before and after the HOP experience. The first test was VASS - Views About Sciences

[6] Appendix, page 1.

Survey. "The general purpose of the test is to survey student views about knowing and learning science and to assess the relation of these views to student understanding."[7] The second test, DIRECT, "was developed to add insight into students' understanding of a variety of direct current (dc) resistive electric circuit concepts"[8] before and after the HOP Electricity unit was taught. The third test, the M-B-T test or Mechanics Baseline Test, "assesses student understanding of those basic concepts in mechanics that should be addressed in introductory high school or college level physics courses"[9] before and after the HOP Mechanics unit was taught.

In addition to these tests, learning skills assessments were given before each of the three sections of the HOP electricity unit or the HOP Mechanics unit were attempted. The assessments were then given immediately after the section was completed so students could describe what the activity was about. A measure of the transfer of knowledge attained by each student was demonstrated through the increased sophistication in questioning and the better use of description of the activity.[10]

The most significant impact of all of these tests was the students' negative views of them. They seemed almost threatened by them as if I was digging too close to the truth and they did not want me to find out how little they really know or thought they knew. During the Fall term when I taught two HOP classes, I changed one of the classes midway through the term to the traditional approach. I did this when their attitude toward one of the surveys was so negative that I questioned whether any learning had taken place. Once I announced the change, the students appeared to relax and the release of tension was immediately evident. This class was a difficult one for me from the start, but why this was so I am not sure. The other class accepted the surveys up until the term was nearly over when they begged me to let them work on the aircart without having to comment via an assessment. How could I not honor that request?

In the Spring term, I taught one HOP class to the Ford ASSET interns. Physics is taught for only eight weeks, but for ten hours each week to these students. I questioned whether I should teach physics using the HOP

[7] Appendix, page 2.

[8] Appendix, page 3.

[9] Appendix, page 4.

[10] Appendix, pages 5-7.

approach since time was at a premium for this class. But, at the last minute I decided to try anyway. I presented the class in a more structured manner than I did with the other classes because of the necessity to cover the material in a timely fashion. However, this time around I took a different approach when administering the tests and the assessments. I used the Learning Skills Assessments as the wrap up for the activity in lieu of a formal lab report. I was also very liberal with my positive comments about their work. I made a big deal out of requesting copies of their work or their design for a prototype to share with the Consortium.

A funny thing happened. The students soaked up my positive comments. The more comments I made, the more the students tried to excel. They became very serious about their assignments in the course, about solving each HOP problem, and in striving to attain the best solution. As a result, teamwork became the key. Oh, did they ever develop into some phenomenal teams. This was not a stretch for them because these students were genuinely nice to each other and very respectful of me. The success I experienced with this class far surpasses anything else in all my years of teaching. We just plain had fun. How much learning took place? I honestly can not say. But, what I can say with certainty is that a change had taken place in my classroom.

Was it because I incorporated HOP projects into the classroom? Was it because I let the students go off on their own to solve problems? Was it because I allowed them to learn more from each other and to risk making mistakes without judging them when they did? I don't know the answer to any of these questions but I am eager to see if next year's classes are as good or better than this last class was. By then, I will have collected enough information that I will be able to better assess this changing classroom.

2001 - 2002 SCHOOL YEAR

So now as I sit here in late June, I think about what will happen in two months; the next school year will start. What will the students be like? What skills will they bring with them to physics? What will be their attitude toward physics? Will finding the time to explore new ideas still be a concern? Will I finally begin to use Blackboard. com as a mode of communication with the students? And, most importantly, what will I see when the elevator door opens?

HANDS-ON-PHYSICS

http:// **hop.concord.org**

Please administer as much of the following assessment as possible for one or two HOP umts:

Content Testing:

before and after the HOP experience	V-A-S-S.
before and after the HOP Electricity unit	D-I-R-E-C-T
before and after the HOP Mechanics unit	M-B-T

Learning Skills Assessment:

during the HOP Electricity unit

before each of three sections	Questioning
after each of three sections	Describing

during the HOP Mechanics unit

before each of three sections	Questioning
after each of three sections	Describing

Information:

Please also complete and return	Class Information
	Faculty Information
	HOP Evaluation

Information from non-HOP physics classes (control) is important for a meaningful evaluation of HOP materials. If you teach another physics class at the same level as your HOP class, please evaluate that class as well. If you don't have a parallel class, perhaps you have a collegue who would be willing to test her/his students for us.

We would like the following assessment for similar curricula in a parallel (non-HOP) class:

Content Testing:

before and after the "regular" physics experience	V-A-S-S.
before and after Electricity	D-I-R-E-C-T
before and after Mechanics	M-B-T

VIEWS ABOUT SCIENCES SURVEY

V-A-S-S

The general purpose of the test is to survey student views about knowing and learning science and assess the relation of these views to student understanding. Specifically it seeks to find significant dif-

ferences between the views of students, teachers and scientists, to identify and classify patterns in student views, and to measure the effectiveness of instruction in changing student views.

The test is designed around contrasting alternatives about science. Students are asked to balance two contrasting alternatives on an eight-point scale. (A special VASS Answer Sheet is designed for this purpose.) Dimensions examined include the *structure of science, scientific methodology, validity in science, learnability of science, the role of reflective thinking,* and *personal relevance of science* to everyone's life.

College and high school students hold views about knowing and learning science that can be classified in three types: *expert, mixed, and folk.* Students do not show a consistent tendency towards one type of view or another on all VASS items. Every student holds a mixture of folk, mixed and expert views in any VASS dimension.

Student views on the entire VASS can be grouped into four distinct profiles: *expert, high transitional, low transitional, and folk.* Students with an *expert* profile are the most likely to have the highest achievement in their science courses. Students with a *folk* profile are the most likely to have the lowest achievement. Students with *transitional profiles* are the most likely to fall in the middle. In the cognitive dimensions, expert views characterize *critical learning,* while folk views characterize *passive learning.* No more than 10% of all students exhibit an *expert* profile, and the remaining students are almost evenly distributed among the other three profiles. The profile distributions are similar in college and high school.

Based on: * Ibrahim Halloun. (1996). Views about science and physics achievement. The VASS Story. Proceedings of the International Conference on Undergraduate Physics Education. American Institute of Physics Press, College Park, MD.

DETERMINING AND INTERPRETING RESISTIVE ELECTRIC CIRCUITS CONCEPTS TEST D-I-R-E-C-T

This test was developed to add insight into students' understanding of a variety of direct current (dc) resistive electric circuits concepts. DIRECT was developed by Paula Vetter Engelhardt and Robert J. Beichner, Ph.D. as part of the NSF funded Assessment Instruments Project at North Carolina State University. The primary goal of the Assessment Instruments Project is to create a series of valid, reliable tests that can be used in pre/post research designs as well as by classroom

teachers. Their real value, however, is believed to be in the classrooms of teachers who are trying new instructional methods and want to evaluate their students' understanding.

Much research has been conducted into students' conceptions of dc resistive electrical circuits. The results from past investigations has shown that students hold a variety of ideas about the current, generally, believing that current is consumed and that the battery acts as a constant current source. In analyzing circuits, students use one of three ways of reasoning, *sequential, local* or *superposition. Sequential reasoning* results in a "before or after" examination of the circuit. Students using *sequential reasoning* believe that (a) current travels around the circuit and is influenced by each element as it is encountered and (b) a change made at a particular point does not affect the current until it reaches that point. *Local reasoning* means that the current divides into two equal parts at every junction regardless of what is happening elsewhere". Students using *superposition reasoning,* would conclude that if one battery makes a bulb shine, then two batteries regardless of the configuration would make the bulb shine twice as bright.

Following an extensive review of high school and university textbooks and laboratory manuals as well as informal discussions with high school and university instructors, a set of instructional objectives regarding dc resistive electric circuits was constructed. An open-ended version of the test was developed based on eleven objectives identified. Three questions per objective were written. Three items per objective provides more statistical evidence of understanding as well as allowing comparisons to be made between items that supposedly relate to the same objective.

From the assessment of the open-ended version, changes were made to the questions and distracters were created for the multiple-choice version of DIRECT. Some questions were removed, added or reworded based on the panel's suggestions. The test, consisting of 29 items, takes approximately half an hour to complete.

One typical comment that the panel made was the omission of the use of meters in terms of their placement in circuits and as a measurement device to determine the behavior of the circuit. Although an important part of laboratory work, they serve as an application of electric circuits concepts as opposed to a distinct concept of their own. If such devices were included on the exam, it would be difficult to determine if students were having difficulties with circuit concepts like current or if they were having difficulties with the use and function of the meters.

A MECHANICS BASELINE TEST
M-B-T

The MBT assesses student understanding of those basic concepts in mechanics that should be addressed in introductory high school or college level physics courses. It provides a baseline for evaluating instruction, testing for applications of Newtonian concepts to simple kinematics and dynamics of a single particle.

The questions are qualitative and focus on finding deficiency and gains in understanding. While the test is not easy, the MBT does not rely very heavily on mathematics - less than a third of the questions require algebraic manipulation. The MBT hopes to cover basic concepts, including those that pose the greatest difficulty for students: the concepts of kinematics and conservation. Advanced concepts such as angular momentum are excluded. Problems that can be solved by a simple "plug-in" into a formula have also been excluded.

Newtonian Concepts	**Corresponding questions on the MBT** (parenthesis means that other concepts are significantly involved in the question)
A. Kinematics	
Linear Motion	
Constant acceleration	1, (2), (3)
Average acceleration	(18), 23
Average velocity	25
Integrated displacement	24
Curvilinear motion	
Tangential acceleration	4
Normal acceleration	5, (8), (12)
$a = v^2/r$	(9), (12)
B. General Principles	
First law	(2)
Second law	(3), 8, (9), (12), (18)
Dependence on mass	117, 21
Third law	(12), (13), 14
Superposition Principle	7, (5), (13), (14)
Work energy	20
Energy conservation	10, 11
Impulse-momentum	16, 22
Momentum conservation	15
C. Specific forces	
Gravitational free-fall	6, 26
Friction	(9)

Based on Table I. David Hestenes, and Malcolm Wells "A Mechanics Baseline Test" *The Physics Teacher* vol 30, March 1992 (pg. 159)

In assessing change in students conceptions or misconceptions, The Force Concepts Inventory (FCI) may be administered first, or the MBT may serve as its own pretest.

HOP LEARNING SKILLS INTRODUCTION

Motivation:

This is a set of queries designed to demon~trate transfer of learning. Transfer wifi be demonstrated as increased sophistication in questioning and in better use of description. This assessment should be used several times in each HOP unit to record changes in students' approach to learning.

Administration:

Have students complete part one (Questioning) of the *HOP Learning Skills Assessment* after an introduction to the activity but before they are fully engaged. Allow 10 minutes for Questioning. Collect the forms and then return them at the end of the activity so students can complete part two (Description). Allow 15 minutes for Description. Return the completed forms to The Concord Consortium. Use this assessment with the HOP activities listed below.

HOP Electricity

Messing Around:

- Building the buzzer circuit,
- The transistor circuit Core Project:
- Testing the LVPS

HOP Mechanics

Messing Around:

- Running,
- Thruster

Core Project;

- Aircart propulsion system including motor mount and electrical circuit

Response Forms:

The double-sided fomis, *HOP Learning Skills Assessment,* should be completed by your students before (front side) and after (back side) HOP activities to help chart changes their learnings skills.

You do not need to score these forms. Please send them to us at The Concord Consortium for scoring and evaluation. We will score

them using the rubrics shown on the next page. This information represents a crucial part of the Hands-On-Physics project, and we thank you for your help with our endeavors.

Mail to: Hands-On-Physics
The Concord Consortium
37 Thoreau Street
Concord, MA 1742
Attention: Judith Collison

HOP LEARNING SKILLS ASSESSMENT

HOP Unit _____ , Activity _____

Name _____ , Date _____

This is a two-part assessment. Please answer the **QUESTIONING** part before you begin working on the HOP activity and the **DESCRIPTION** part after you finish.

BEFORE

Questioning:

Read through the HOP activity and think of some questions about it. Before you begin this activity, please write down at least three questions. These should be questions about what you don't know, what you are curious about, what you don't understand, what you need to find out, or what you need to have explained. You should finish your questions in 5 to 10 minutes.

Question #1:

Question #2:

Question #3:

Question:

Question:

After you have finished the HOP activity, please complete the back of this page

HOP LEARNING SKILLS ASSESSMENT
AFTER

Description:

After you have finished this HOP activity, take a few minutes to think about how you solved the problems it presented, and respond briefly to the requests below. You should finish your responses in 10 to 15 minutes.

1. Describe the main problem in your own words. (What were you trying to find out?)

2. List the information and tools you had to work with. (What helpful information, apparatus, or experience was available for you on the way to solving the problem?)

3. Draw a diagram or picture or graph of your discoveries. (Please use labels and include a sentence or two to clarify the processes or phenomena you are representing with a picture.)

4. Explain your strategy for solving the problem. (What did you do?)

TO CHEAT OR NOT TO CHEAT
The Inhibitory Factor of an Honor Code

Sandra Cole

INTRODUCTION

This spring I once again encountered the age-old and still growing problem of cheating. And I began to think back on the college tours that I did with my daughter several years ago. Some of the colleges we visited required students to sign an honor pledge stating that they would handle their college work with integrity. This seemed like a very good policy to me. After all, if you have to sign a pledge, you not only have to think about the issue of cheating, you actually have to sign a piece of paper saying that you will not commit such practices. This certainly sets a tone which promotes an educational environment of integrity.

On several occasions, I casually suggested the adoption of such a policy in our college. But this last incident awoke again the feelings of disappointment and betrayal that follow such an incident and the damage it does to the student whether or not a judicial process is pursued. Such a student will be showing credentials to a prospective employer that do not truly reflect the skills possessed.

THE REASONS FOR CHEATING

So why do students cheat themselves and their futures? Research indicates there may be many reasons. Some students are unclear of the more stringent documentation requirements used in writing college papers, and degrees of acceptable collaboration do differ from instructor to instructor, causing confusion. Most students agree that cheating is wrong and not in the best interest of society as a whole, but may use a process Gresham Sykes and David Matza call *neutralizing*. In neutralizing a student excuses his cheating by emphasizing special circumstances that make it okay. Some examples of neutralizing include denying that the behavior hurt anyone, making the tyrannical teacher the cause, emphasizing their need to please their parents, and denying the responsibility for the act. They haven't abandoned their values, just decided that, in this situation, they don't apply. Students are more likely to cheat in their non-major classes when they don't see the knowledge being taught as having a future value to them. Some may cheat to 'level the playing field,' seeing others in their classes as being advantaged in terms of wealth

or natural abilities. Others have not achieved the same level of ethical development as their peers, just as cognitive levels may differ. If all else fails, the cheating students can rationalize by telling themselves that everyone does it. And the dearth of positive role models they see in society may convince them that this is true.

Yet everyone does *not* do it. According to research done by Dr. Donald L. McCabe, Professor of Organizational Behavior at Rutgers University, and his associate, Dr. Linda Klebe Trevino of Penn State's Smeal College of Business Administration, honor codes do have an effect on student integrity. In colleges with honor codes (generally smaller private colleges), rates of cheating are 18% lower than on campuses without honor codes. And while this is not an astounding drop, the number of students engaging in chronic cheating drops from 1 in 4 for non-code campuses to 1 in 16 on campuses with honor codes.

CONSTRUCTION OF A CODE

Colleges must create an environment in which academic dishonesty is socially unacceptable. (Schulman 7) A visible and often repeated honor code can contribute to promoting an academic environment of integrity. Most honor codes include a definition of what makes up cheating, an honesty pledge the student signs which may also require the student to report incidents of cheating, and a strong student voice in the judicial process for those caught cheating.

The definition of cheating is further elaborated on many campuses to clarify the issue for students.

Western Carolina University lists areas of academic dishonesty as:

a. **Cheating**—Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.
b. **Fabrication**—Intentional falsification or invention of information or citation in an academic exercise
c. **Plagiarism**—Intentionally or knowingly representing the words or ideas of someone else as ones own in an academic exercise
d. **Facilitation of Academic Dishonesty**—Intentionally or knowingly helping or attempting to help someone else to commit an act of academic dishonesty, such as knowingly allowing another to copy information during an examination or other academic exercise.

Georgia Tech also includes:

- Substitution for, or unauthorized collaboration with, a student in the commission of academic requirements

- False claims of performance or work that has been submitted by the claimant
- Alteration or insertion of any academic grade or rating so as to obtain unearned academic credit
- Forgery, alteration or misuse of any institute document relating to the academic status of the student

Cornell includes:

- Fabricating data in support of laboratory or field work
- Forging a signature to certify completion of a course assignment or a recommendation to graduate school
- Unfairly advancing one's academic position by hoarding or damaging library materials
- Misrepresenting one's academic accomplishments

The honor pledge itself can be a simple statement such as, "On my honor, I have neither given nor received aid in completing this assignment," though some go on to require students to report incidents of cheating that they discover. The Honor System of North Dakota State University College of Agriculture operates on the fact that "most students are honest and work best in situations where their honesty, and the honesty of others, is not in question. It operates to prevent or to curtail academic dishonesty as well as to penalize those who are dishonest." An additional factor included in the honor code may be encouraging the student's responsibility for suggesting ways to improve the system, a useful factor as technology changes and new ways of cheating develop. Some honor policies allow for "Conscientious Retraction" so that students voluntarily admitting they cheated may agree to take an F with no other sanction. The many factors which can be included allow a college flexibility to tailor the honor code to their own purposes.

In many cases the honor policy originates as a student issue and may be presented by a student governing body. The Student Senate of North Carolina State University has recently passed an amendment to their constitution strengthening their previous honesty statements. The student now promises, "to uphold the principles of honor, integrity, and moral responsibility...[and] to prevent any students from gaining an unfair advantage through dishonesty." They felt it important to take a proactive approach to encouraging student honor rather than their previous focus of dealing with incidents of dishonesty after they happened.

Student judicial systems differ in form but have similar purposes in allowing student offenses to be heard by peers and to reinforce the student monitoring and validation of integrity in the college.

USES OF A CODE

At Georgia Tech and many other colleges, students must sign an honor code before admission and this code may reappear for signing on exams and other assignments. The University of Virginia sends an informational video on the school's honor code with the student's acceptance letter. When students arrive on campus, they must explicitly pledge to study for good grades, and not to lie, cheat, or steal to get those grades. They formally acknowledge what they have pledged at an honor ceremony, then are funneled off to informational meetings to further their understanding of the code. A UVA Honor Advisor says, "Many students choose to attend UVA specifically because of its age-old honor system."

In other colleges, instructors may choose to ask their students to sign such a code, independent of college policy. The pledge can also be routinely required to be written and signed on all work handed in and on tests. At the University of Denver, scrolls quoting the honor code are frequently displayed at various college functions so that awareness of the policy and its importance to the university are frequently reinforced.

The Honor Code at Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. It specifically aims to accomplish the following:

- Ensure that students, faculty, and administrators understand that the responsibility for upholding academic honesty lies with them;
- Prevent any students from gaining an unfair advantage over other students through academic misconduct;
- Ensure that students understand that academic dishonesty is a violation of the profound trust of the entire academic community;
- Clarify what constitutes academic misconduct among students at Georgia Tech and what is expected of them by the Institute, the faculty, and their peers;
- Cultivate an environment at Georgia Tech where academic dishonesty is not tolerated among the students;
- Secure a centralized, system of education and awareness of the Honor Code.

SUMMARY

Dr. Donald McCabe, in summarizing the findings from his research, states, "I believe that the success of honor codes is due at least in part to successfully building a sense of community responsibility for academic integrity on campus. Not only does such an approach effectively communicate to students the institution's commitment to academic integrity, it also encourages students to take responsibility for their own behavior."(College 5) And in a quote from UVA's honor code, McCabe puts it another, significant way: "Students at schools with well-implemented honor codes look at the issue of cheating in a fundamentally different way. What happens with the code is that students view cheating as a student issue, not as some kind of game with the faculty." (College 3)

Because of our smaller sizes and because of our close relationships with students, it is very possible that the cheating problem on our NHCTC campuses may be lower than the national average. But incidents such as the one I began with do happen. They do degrade the educational experience for those who cheat, as well as bruise our faith in students' integrity. By having to personally adopt an honor code which also defines areas of academic dishonesty, our students will have a crystal clear view of our expectations. And by repeating that policy on tests, we can keep integrity in the forefront of students' minds. We can do it individually or we can do it as a college or system. The opportunity to keep the issue of academic integrity conspicuous and vital on our campuses is open to all of us. And next semester it will be conspicuously present for my students.

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AN ACCOUNT AND AN ANALYSIS OF THE IMPACT OF WEB TECHNOLOGY ON DISTANCE EDUCATION: WHAT REMAINS UNCHANGED, WHAT IS CHANGING.

Wendy Smith

"We are all moving from the industrial age to the Information Age, from the Age of Steel to the Age of Silicon." [1] As William J. Cibes, Jr. notes, education is changing. This change is as revolutionary as Gutenberg's invention of the printing press in the fifteenth century. That event shifted information from the relatively exclusive province of priests to everyone's domain.[2] The next major shift in delivery of education was during the industrial age. In the mid-nineteenth century the focus was to train factory workers. Workers were drilled to be docile; to receive information, and to follow directions.[3,4] That era is over.[3] Curiously, the beginnings of Distance Education (DE) also came in the same century. It began when the US mail system made it possible to deliver printed educational material to people far away. In using mail or technology to deliver learning modules the thought was to provide learning to those who otherwise had no access.[5] This was to be DE's original mission: to provide open access.[6] In the process of moving learning from the campus to people beyond its confines distance education (DE) was generated.

More recently education has been on the move once again as DE moves from paper, audio and video base to the Internet The question is: what is changing and what is not in this process of utilizing the Web? This paper will focus on the impact of the net in five areas: theory, students, teaching, corporate campus and the demographics of DE globalization.

First, what has happened to the learner in this web based system? One cannot really talk about the student without discussing how learning theory occurs in DE. In distance asynchronous learning the student and the teacher are separated in time and space. The face-to-face interaction is missing. This causes a shift in learning. Moore defines this theory in

1972 as transactional distance. In distance education there is a separation of the educator and the learner. For communication to happen there must be the right mix of two elements: structure and dialog. Dialog is the extent to which instructor and learner in the DE environment are able to communicate with one another. Structure refers to how responsive a program is to individual's needs.[5,7] Transactional distance is the continuum of communication over distance. That continuum will vary with delivery modes. Teaching on the web using the current versions of Blackboard and WebCT may alter significantly as the means of communicating through those modalities change. The amount of dialog allowed seems to be constantly increasing. Some of that is a function of the platform, and some is a function of the instructor and the interactivity of the students in any given course.

The distance setting also promotes a more learner-centered environment. Students are seen as cognitive active learners - processors of information. This is quite a change in thought from the mid-nineteenth century model in which they were information receptacles.[8] The more effective environment is often collaborative. Research at the Open University has shown that the student in the asynchronous course needs to cross a "threshold" and feel included in the course - not feel the outsider.[9] When the student is included they often express this in positive comments. One student said they had never had better attention.[8] Achieving such results is not accomplished easily. Some students feel left out of the loop and are vulnerable to dropping out of the course and the program. "Learning requires engagement . . . Learning is not a spectator sport."[10]

Considering the learner and the medium, pedagogy is key in engaging the student in the world of web based teaching. The newness of the medium may bring about apprehension for the teacher new to DE. The American Association of University Professors (AAUP) reports faculty concerns about DE include: no face-to-face contact, use of sophisticated technology, copyright issues for course syllabi, intellectual property rights and faculty compensation issues if their preparation time is longer.[11] For the person preparing their first course there may be a lack of support. Some isolated teachers may treat course preparation as early moviemakers treated filming. Filmmakers would take single camera angle shots of a stage performance. Teachers may take their face-to-face teaching notes and put them on line. This single camera angle way of teaching

misses new exciting teaching strategies, using several perspectives to present material.[12] The hesitant faculty person needs training to succeed in this new field. The student is in center stage on the web and the faculty member is the "guide on the side" of a well crafted class.[13,14] The planning of that class is crucial.[15] Much of the difference will be in course design. If student participation is worked into the mix, it will engage a good deal of instructor time.

Can it be done? David Noble would have us question that. He believes that the best evaluators of DE are students, and students "insist on face-to-face" teaching.[14] Elliot Soloway, editor of the Interactive Learning Environments Journal thinks that the technology is not yet 100%. He finds it too challenging to use and "not ready for prime time."[8] So say the Ludites and the hesitant. Yet, it has been shown that web based courses work and can produce results equal to that of the face-to-face classroom.[8]

It takes certain backups for the educator to succeed on the web. One is technological support available for both educator and student. In some settings teams develop the course: one develops, another delivers and a third evaluates.[17] The faculty developing the course also needs to find methods other than lecture. How they teach is important no matter where they might be. Course design and planning the DE course is critical.[15] The techniques that will be used are currently being developed. Some of the outlines for success are known such as the role of the instructor as catalyst, coach and program manager of course content and knowledge. In this setting students collaborate in the learning process and are developed as active learners.[4] The student is freed of the constraints of the classroom. The teacher's professional identity in this new dimension can be transformative.[18]

What is the course preparation time for web based preparation? It was about 50% more for Keith Ross of Penn's School of Engineering. His experience is similar to that expressed by others. The advantage he found was in the ability to continuously improve the course. He finds his DE course's quality improves every year.[10] Planning a distance education course is crucial and that is what takes the time. The instructor does not change in that the effective instructor is what matters no matter what the delivery mode. How the subject matter is being taught needs to be thought about no matter what the subject matter might be.[15]

This experience at the higher education level is being shared at the secondary level. Roger Schank, Director of the Institute for Learning Sciences at Northwestern University has a broad vision for education in the 21st century. He believes advanced placement high school courses will be replaced with their DE college equivalents. This will allow graduating high school students to begin college with their first year courses nearly complete. Further, Schank believes high school educators might better serve as coaches and tutors of expert high standard DE curriculum than the authors of their own classroom material. He sees this new format as being "about ideas, about interactions, about how we solve problems."[3] Eventually DE courses may make up half the day in this new vision high school with social skill building and activities taking up the rest of a six-hour day. Big changes.[3]

New organizations are being developed - virtual universities. Unlike the traditional campus where students would meet on campus, the campus consists of the homes of the students - wherever in the world that might be. This is changing the traditional campus. State funded "colleges are being forced to change and focus on the learner and learning."[16] The changes are diverse and varied. They know no geographic borders.[18] Some futurists even predict "by 2025 traditional universities may be a thing of the past, replaced by consortia of course providers with delivery systems that simply bypass the classroom."[19] The vision continues to state that we will have certifying colleges that will grant degrees given an amalgam of courses from its consortium. Peter Drucker, a corporate futurist also believes the traditional university will not survive, that the future is outside of tradition.[20]

The futurists seem to be simplifying for sake of sound bytes. The new systems will need infastructure.[21] A latticework needs to exist for the web-based courses to be supported. Problems here may develop for the smaller less well-funded institutions in being able to afford instituting the lattice. They may also be less able to make the transition to develop training, technological support, and administrative structure. What the small colleges and the large colleges *do* have is the social support structures. The face-to-face networking that occurs during a four year baccalaureate is difficult to replicate in the digital world. Brian Mueller of the University of Phoenix states, "That's been the Achilles' heel of distance programs throughout history and it still exists today."[22] Probably the future will be a marriage of traditional and digital campuses. Residen-

tial campuses work and the market is still increasing. But institutions will not be effective as stand alone venues. They need to be "nimble, flexible and responsive."[24] The basic culture of the institution will be change.[20]

There is another marriage occurring on campus - that of business and the collegiate world. The corporate world is experiencing an aging workforce that needs training in an increasingly technological world. It is anticipated four/fifths of the 21st century work force will need retraining [18] It becomes important for the industries - corporate and collegiate - to analyze the "market and decide if there is a niche" that can be filled, then work on filling it with the appropriate delivery modules and consumers.[6] In an effort to find consumers, there will be a significant market implications as hundreds of colleges compete. An extra-institutional solution of traditional and economic organizations might well be the survivor.[23]

It is projected if there is an on-market fall in the traditional campus it will take place in the MBA field. Business courses do not require the complex set up costs that the sciences do. It also has proved a successful degree for students to achieve by distance education. However, quality education is neither cheap or easy.[20]

The biggest changes may be in the outreach that the web has to offer. It can reach people nationally and internationally that the fixed campuses can not. It can reach between nations in ways that are incredible and still beyond what we dream of in futures to come. For example, Africa has very few Internet service providers currently. With wireless technologies, that will gradually change. It can help provide the interconnectivity to realize the potential of the continent. The Internet may help provide answers to the problems of illiteracy, hunger and drought.[24] Schools in developing countries without teachers could access educational web sites and long distance teachers.[25]

In conclusion it can be said that students and teaching will stay the same but shift in perspective. The course design will be different or not succeed and the theories of how to develop that design will improve distance education. The basic traditional campus is changing as institutions race to discover effective ways to compete. Most noticeably, the world of education is changing globally as different distance education strategies such as wireless, radio, television and the web are bringing education to parts of the world that have never experienced it before. The changes are huge and exciting, definitely worth studying in this, the beginning of the twenty-first century.

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